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How Does A Composting Toilet Work

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how-compost-toilet-work

Composting toilets are becoming popular in Western society today, though the Eastern societies had already been using this type of toilet for decades. This toilet is a good option for anyone looking to live off the grid, in a tiny house, RV, boat, or cabin. The compost toilets allow you to safely deal with human waste, without relying on a septic system or being tie down to the city sewer.

The concept behind composting toilets is quite simple and extremely effective, but not everyone knows how the toilet actually handles and decomposes human waste. In this article, we'll briefly explain the basic functions of a composting toilet, its components, and how the toilet decomposes human waste. So, let get started!

Basic Functions of a Composting Toilet

It is essential to discuss the basic functions or roles the toilet system play before you learn about how composting toilets work. Here are three functions a compost toilet has to perform to recycle human waste.

1. Evaporate the moisture

The human waste contains 90 percent of water. This type of toilet is design in such a way that it doesn't allow solid and liquid wastes to mix in the composting chamber. So, the liquid part of your waste evaporates either through environmental elements like the wind and the sun or through the toilet's vent system.

The compost toilet vent allows the evaporated liquid to escape into the air. This type of toilet needs oxygen, heat, moisture, and aerobic bacteria to perform correctly. A well-built composting toilet must remain moist, not wet, for the waste to break down quickly.

2. Odorless compositing of solid waste

While solid waste can break down if left on its own and turns into dry compost material, the process would take a long time and produce foul odors. An operating compost toilet requires the addition of a material such as peat mix, sawdust, wood, ash, paper, and other additives.

These materials are referred to as bulking material and can help to hasten the break down of waste quickly. They

also make sure that the resulting end product is safe to handle and use. Another creative additive for your waste is coffee ground; this doesn't only act as an excellent bulking material, but also adds a bit of pleasant smell.

3. Produce compost material that is safe to handle

You need to empty your unit once it is full. A compositing toilet leaves you with safe to use and handle material that is rid of the bad smell if the unit function, as it should. At this point, it should not appear as a human waste but like garden compost.

Buying a system with a size that suits your need will help ensure very infrequent empties. This gives the system enough time to do its job excellently and create an excellent additive for your flower garden.

Components of a Composting Toilet

components composting toilet

This type of toilet utilizes a biological process that you'll find so exciting, but first, you need to know the components that allow them to attain the desirable results. Any composting toilet system must contain the following components:

1. Ventilation unit

This particular area is primarily designed to help enhance the degradation process. This component makes the toilet predominantly aerobic in such a way that it can let go of the malodorous gases naturally.

2. Composting chamber

This part is also known as storage, where the wastes are reserved immediately after dropping and awaits the decomposition process. The chamber serves as a space for the productive natural break down for both urine and human waste and converting them into organic compounds.

3. Leachate management

This section is built to allow quick removal of excess liquid that might end up mixing with the wastes. The essence of this part is to create an ideal environment for a faster rate of decomposition.

How Does a Composting Toilet Work?

There is no flushing involved in compost toilets, unlike the traditional toilet systems. This type of toilet depends on aerobic bacteria to break down feces and urine into a safe product. A composting toilet needs three main elements to properly break down your waste: heat, moisture, and the right amount of oxygen.

When you use a compost toilet, the urine and solid waste separate to create a perfect environment for enhanced activity of aerobic organisms. The urine moves to the deepest part of the composting chamber by gravity. The aerobic bacteria present in the chamber are then engaged in an action that sees them convert the urine into an ordinary liquid.

The solid waste enters a holding chamber tank, where the composting occurs. Here the waste is transformed into dry compost material. Carbon materials such as wood chips, sawdust, straw, paper, ash, and others are added. Like we said earlier, these materials are referred to bulking material, and will ensure the proper aeration of the compost pile.

Some creative, compost toilet veterans even use coffee grounds to break down waste. Odors are generally eliminated using air flowing over the composting material and to an outside vent. The end product is compost material if done correctly, which is similar to the topsoil from the perspective of biologically and chemical composition. The compost material contains various plant nutrients and serves as garden or backyard fertilize.

Conclusion

Many people living off-grid are choosing composting toilets. If proper care and maintained, composting toilets can be a safe and cost-effective alternative to traditional flushing toilets. They don't stink, environmentally friendly, and easy to use.

They are an excellent solution for anyone on the go. Besides, they are well suited for remote areas. We hope this guide has helped you know how a compost toilet works.

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